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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,325	04/19/2004	Hans Ulrich Frutschi	61277-0013	1062
27890	7590	12/05/2005	EXAMINER	
STEPTOE & JOHNSON LLP 1330 CONNECTICUT AVENUE, N.W. WASHINGTON, DC 20036			EDGAR, RICHARD A	
			ART UNIT	PAPER NUMBER
			3745	

DATE MAILED: 12/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/826,325

Applicant(s)

FRUTSCHI, HANS ULRICH

Examiner

Richard Edgar

Art Unit

3745

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/19/2004</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Drawings*

The drawings are objected to because the sole figure uses a numbered abbreviation. See 37 C.F.R. §1.84(u)(1). The specification should be correspondingly amended to delete any references to "FIG. 1".

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 9-13 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 2,549,819 (Kane hereinafter).

Kane teaches an axial flow compressor adapted to condition an airflow, the axial flow compressor comprising: an entrance 14, an exit (defined by flange 18), a central rotor 15 and a stator 11 surrounding the rotor, with the rotor and stator being coaxially arranged about an axis 16; means 21 for introducing water into a boundary flow of the airflow disposed at an inner wall of the stator.

The means comprises a plurality of nozzles 21 circumferentially arranged on the stator. The axial flow compressor further comprises alternating blades 17 and vanes 13, wherein the nozzles 21 are mounted between adjacent vanes and blades (see deflector 25 in Fig. 5). The nozzles 21 are arranged proximate the entrance of the axial compressor in flow direction (see Fig. 1; stage 3 of 12).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 3,632,223 (Hampton hereinafter) in view of United States Patent No. 2,549,819 (Kane hereinafter).

Hampton shows an axial flow compressor 12 comprising an entrance, an exit, a central rotor 22 and a stator 10 surrounding the rotor, with the rotor and stator being coaxially arranged about an axis, in which the airflow is drawn in at the entrance and compressed along the axis, wherein a portion of the airflow is bled before the exit in the flow direction (see Fig. 2) for use as cooling air (see col. 2, lines 4-6).

Hampton does not teach to inject water through a plurality of nozzles arranged between a row of adjacent blades and vanes proximate the compressor entrance in order to cool the compressor air following evaporation.

Kane teaches a compressor having a plurality of water injection nozzles 21 arranged between a row of adjacent blades 17 and vanes 13 proximate the compressor entrance 14 in order to cool the compressor air flowing evaporation (see col. 1, lines 45-49).

Since Hampton show the desire of relatively cool compressor air, and Kane teaches how to lower the temperature of compressor air, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the compressor of Hampton to have the Kane water injection nozzles for the purpose of lowering the temperature of the compressor bleed air supplied to the turbine components.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 2,549,819 (Kane hereinafter) as applied to claim 10 above, and further in view of United States Patent No. 3,632,223 (Hampton hereinafter).

As discussed above, Kane teaches an axial flow compressor adapted to condition an airflow, the axial flow compressor comprising: an entrance 14, an exit (defined by flange 18), a central rotor 15 and a stator 11 surrounding the rotor, with the rotor and stator being coaxially arranged about an axis 16; a plurality of nozzles 21 circumferentially arranged on the stator 11 for introducing water into a boundary flow of the airflow disposed at an inner wall of the stator.

Kane however, does not teach the compressor further comprising an outlet disposed between the nozzles and the exit for receiving air.

Hampton shows an axial flow compressor 12 comprising an entrance, an exit, a central rotor 22 and a stator 10 surrounding the rotor, with the rotor and stator being coaxially arranged about an axis, in which the airflow is drawn in at the entrance and compressed along the axis, wherein a portion of the airflow is bled before the exit in the flow direction (see Fig. 2) for use as cooling air (see col. 2, lines 4-6) in the downstream turbine components.

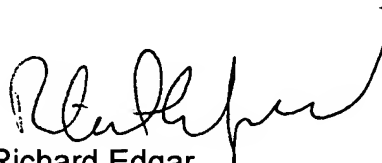
Since Kane teaches the use of water to lower the temperature of compressor air, and Hampton teaches the use of compressor air to cool turbine components, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the Kane compressor to have a bleed circuit, as taught by Hampton, for the purpose of cooling downstream turbine components.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Edgar whose telephone number is (571) 272-4816. The examiner can normally be reached on Mon.-Thur. and alternate Fri., 7 am- 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Richard Edgar  
Examiner  
Art Unit 3745

RE